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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 09/067,795 | 04/28/98 | DOVEK M | 3123-276 |

| EXAMINER | |
|---|---|
| KORZUCH, W | |
| **ART UNIT** | **PAPER NUMBER** |
| 2754 | 10 |

022442
SHERIDAN ROSS PC
1560 BROADWAY
SUITE 1200
DENVER CO 80202

LM02/0426

**DATE MAILED:** 04/26/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

| Application No. | Applic...(s) |
|---|---|
| 09/067,795 | Dovek et al |
| **Examiner** | **Group Art Unit** |
| William Korzuch | 2754 |

☒ Responsive to communication(s) filed on *Feb 5, 2000*.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**

☒ Claim(s) *1-60* is/are pending in the application.

Of the above, claim(s) *20 and 34-41* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-19, 21-33, and 42-60* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

**Application Papers**

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on *Jun 28, 1999* is ☒approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

*--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---*

***Election/Restriction***

1. Applicant's election with traverse of Group I in Paper No. 6 is acknowledged. The traversal is on the ground(s) that

(1) The Examiner has failed to indicate which Group includes claims 17 and 30;

(2) The Examiner's position that Group I claims are drawn to a flux-guided magnetoresistive head is clearly incorrect since claims 17 and 60 are drawn to a magnetic storage device;

(3) Claims 1-16 are also directed to a magnetic recording system instead of a head;

(4) The fact that various dependent claims recite additional features of the circuitry does not justify a restriction requirement; and

(5) There are no claims directed solely to the circuitry, thus the so-called subcombinations are generically claimed.

This is not found persuasive because

(1) Linking claims 17 and 30 belong to both Groups. That is why they are called linking claims. They link the Groups together and are examined with either Group that is elected. If a linking claim is found allowable then the claims from the non-elected Group that depend on the linking claim will be rejoined;

(2) The restriction requirement was rewritten to state that the Group I claims are drawn to a flux-guided magnetoresistive head of a magnetic recording system. Therefore, this argument is moot;

(3) See above answer to (2);

(4) The dependent claims were not the basis of the restriction requirement. In effect, Group I includes claims 1-33 and 42-60, while Group II includes claims 17, 20, 30 and 34-41. Having two distinct inventions drawn to a single independent claim that recites generic features does not circumvent the possibility of restriction. This is analogous to an election of species where there is a generic claim;

(5) The sub-combinations are not generically claimed. The head claims in Group I recite the specific pole structure and location of the magnetoresistive element while the circuitry claims of Group II set forth the particular detectors that are used.

Therefore, the requirement is still deemed proper and is therefore made FINAL.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

2. Claims 20 and 34-41 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Drawings***

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on June 28, 1999, have been approved by the Examiner.

***Claim Rejections - 35 USC § 112***

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 states that the yoke includes the first, second and third pole pieces. Claim 1 states that the yoke is disposed within the write element. There is only three pole pieces in the head. Therefore, if the yoke contains all the pole pieces and is disposed within the write element then the write element and the yoke are referring to the same elements. This is unclear and confusing.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 10, 11, 13-15, 17-19, 21, 24-27, 29-33, 42-50, 53, 55, 57, 58 and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al (U.S. Patent 5,486,967) for the reasons set forth in the Office action dated April 29, 1999.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-19, 21-33 and 42-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesterman et al (U.S. Patent 5,434,733) in view of Hamilton (U.S. Patent 4,423,450).

Claims 1-19, 21-33, 42-52, 55 and 56-58 are rejected for the reasons set forth in the Office action dated April 29, 1999.

With regard to claims 53 and 54, Hesterman et al in view of Hamilton shows all the features except for the head contacting a lubricant on the top surface of a magnetic storage medium during read/write operations. Official Notice is taken that it is old and well known in the art to enable contact recording by having the head ski along a lubricant on the top surface of a recording medium. This is done to increase the density of the disk by decreasing the head-to-disk spacing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the drive of Hesterman et al in view of Hamilton with a disk having a lubricant for contact recording. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to provide the drive of Hesterman et al in view of Hamilton with a disk having a lubricant for contact recording so that the density of the drive can be increased.

With regard to claims 59 and 60, Hesterman et al in view of Hamilton shows all the features except for whether the media is a disk or a tape. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the head of Hesterman et al in view of Hamilton with either a disk or

tape. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to use the head of Hesterman et al in view of Hamilton with either a disk or tape since they are the two most common types of magnetic media that are used to store information.

7. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Somers (U.S. Patent 5,097,371) in view of Hamilton (U.S. Patent 4,423,450).

With regard to claim 55, Somers shows in Figure 1 a head for use in a magnetic storage device including a magnetic storage medium; the head including: a write element for inducing magnetic polarity transitions in the magnetic storage medium during a write operation, a yoke (3,4,5), and a magnetoresistive read element (7) mounted in a flux flow path of the yoke and recessed from the magnetic storage medium. The yoke includes a write flux guide (3,5) that provides a write gap and a read flux guide (3,4) that provides a read gap, and the read flux guide is integral with and positioned within the write flux guide. The yoke includes first, second and third pole pieces, the first and third pole pieces (3,5) are in the write flux guide and provide write poles that define the write gap, and the first and second pole pieces (3,4) are in the read flux guide and provide read poles that define the read gap. The head also includes write coils (9)

disposed between the first and third poles pieces, but not between the first and second pole pieces. Somers does not show the perpendicular recording media or the circuitry for receiving readback pulses from the magnetoresistive read element. Official Notice is taken that perpendicular magnetic recording media are old and well known in the art and the circuitry for reading Lorentzian pulse shaped signals is also old and well known in the art. Additionally, Hamilton teaches that ring or thin film heads can be used to record as well as read data on perpendicularly oriented media. This is done by reducing the spacing between the head and the medium. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the head of Somers to record on perpendicular media as taught by Hamilton with circuitry for receiving the readback pulses. The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to use the head of Somers to record on perpendicular media as taught by Hamilton with circuitry for receiving the readback pulses since perpendicular media increase the amount of information that can be stored due to it's higher density.

***Response to Arguments***

8. Applicant's arguments filed on June 28, 1999 have been fully considered but they are not persuasive.

Applicant asserts on pages 14 and 15:

"Tanaka et al fails to teach or suggest a magnetoresistive element that produces a readback pulse having a substantially Lorentzian pulse shape, much less circuitry adapted to receive such a readback pulse from the magnetoresistive element."

The Examiner maintains that Tanaka et al shows the combination of a perpendicular magnetic recording media and a flux-guided (yoked) MR head. This combination is described in the specification of the instant application (Page 14, lines 21-26) as producing a readback pulse signal with a Lorentzian-type pulse shape. Therefore, the head of Tanaka et al must also produce a readback pulse signal with a Lorentzian-type pulse shape. Tanaka et al inherently contains circuitry for receiving signals from the magnetoresistive element.

Applicant asserts on pages 15 and 16:

"Hesterman et al says nothing about a magnetoresistive element that produces a readback pulse having a substantially Lorentzian pulse shape. In fact, Hesterman et al discloses in Figure 5 a graph plotting mean flux density in a magnetoresistive element versus position of a single magnetic transition in the medium that is similar to the graph of readback pulse voltage versus head position for conventional MR heads in longitudinal recording systems shown in Figure 4 of the instant application."

It is the Examiner's position that the graph in Figure 5 of Hesterman et al shows a readback pulse that is similar to the readback pulse of a conventional longitudinal recording system since the head of Hesterman et al is used to read from longitudinal recording media. The rejection states that it would have been obvious to use the head of Hesterman to read information from perpendicular recording media. The readback pulse from the perpendicular recording media would have a substantially Lorentzian pulse shape.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the

statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication should be directed to William R. Korzuch at telephone number (703) 305-6137.

William R. Korzuch

WILLIAM R. KORZUCH
PRIMARY EXAMINER

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April 21, 2000